

## LEPIDOPTEROLOGICAL CONTRIBUTIONS.

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When Mr. F. H. Benjamin recently visited the senior author at Decatur he pointed out that a considerable quantity of manuscript represented by changed names in the latter's collection, or by manuscript types, remained unpublished. It is, therefore, now published in order to balance the names in the collection with published work.

## I.

THREE NEW SPECIES OF PHALÆNIDÆ FROM THE NEW JERSEY  
PINE BARRENS.*Feltia buchholzi* sp. nov.

Frons with a slightly raised but not roughened projection. Antennae serrate and fasciculate. Palpi blackish laterally. Head rufous. Collar with a slight black band. Thorax and fore wing purplish gray slightly tinged with rufous and irrorated with black; basal line indistinct; t. a. line black, excurved in the submedian fold and below vein 1, claviform distinctly black outlined, more or less connected to base of wing by a slight black streak; orbicular ovate, pale, black outlined and with blackish center; reniform similar in coloration, short; a median diffuse black shade passes between the ordinary spots where it is intensified into a black cell filling, thence outwardly oblique to inner margin; t. p. line strongly dentate, bent outward below costa, excurved to about vein 4, then incurved; s. t. line represented by a faint blackish shade with only traces of any black dashes between the veins, which of themselves are more or less black marked; a narrow black terminal line; fringe pale at base with darker interline and dusky tips. Hind wing whitish, heavily tinged with fuscous, and appearing rather dark; no discal mark; fringes pale at base, with darker interline and dusky tips. Underside whitish, the fore wing, costal—outer margins and veins of hind wing so irrorated with fuscous as to appear quite dark; a dusky common band across all wings.

Expanse: 28 mm.

More like the western *gravis* than any other species known to us. Besides the eastern locality, the practical lack of an s. t. line, plus darker hind wing with lack of discal mark on upperside, should distinguish it. *Type locality*: Lakehurst, N. J.

*Number and sexes of types:* Holotype ♂, allotype ♀, Barnes Coll. Paratypes 2 ♂, Lemmer Coll.

?*Epipsilia heinrichi* sp. nov.

All tibiae spined, fore tarsi with rather longer spines than normal, the spines at the distal ends of the segments appearing almost claw-like. Head and thorax clothed with fine hair-like scales and rough hair, venation normal Agrotid, frons smooth and somewhat rounded out; palpi hairy below, dark at sides pale at tips. Frons pale; vertex, collar, and thorax concolorously dull purple brown; abdomen tinged with rufous. Fore wing purple, suffused with violaceous gray and rufous, and irrorated with black; basal line from costa to median vein narrow, black; t. a. line faintly double, inner part suffused, included space of ground color, outer part distinct, black, waved; claviform obsolescent; orbicular irregular, pale, outlined faintly by black, with a central filling of ground color; reniform irregular, mottled, tending to be inwardly extended along median vein, and with a black spot in its lower part; t. p. line oblique on costa, strongly excurved around cell, dentate on the veins; s. t. line pale, obsolescent, mesially marked by a blackish spot on costa; a faint terminal series of black spots between the veins. Hind wing fuscous, somewhat paler basally. Beneath: pale, sordid, irrorated with fuscous, with faint discal spots and common band. Expanse: 35 mm.

*Type locality:* Lakehurst, N. J. *Number and sexes of types:* Holotype ♀, "IV-26."

We know of no closely allied species. This insect will probably ultimately become the type of a new genus. It is a connecting link between "*Agrotis*" in the sense of Hampson and *Epipsilia*, besides possessing characters not possessed by typical species of either genus.

?*Graptolitha lemmeri* sp. nov.

Allied to the European *Graptolitha lapidea*<sup>1</sup> to which it will run in Hampson's keys (1906, Cat. Lep. Phal. B. M., VI, 247, 249). Differs from the European species by the stronger nature of the markings, the t. a. and t. p. lines produced to

<sup>1</sup> For the loan of this specimen, and many other courtesies including comparisons of various genotypes, we are indebted to Dr. William Schaus of the National Museum.

longer and sharper points, more red at the base of the reniform, fore wing with costal and inner margins more nearly parallel, and all wings darker, the hind wings nearly evenly fuscous. Beneath the discal spots are much better marked, as are the lines on the tibiae. We have no male of *lapidea* available for dissection, but from a superficial examination of the male genitalia of a single specimen of the European species which was loaned to us, the structure termed ampulla by Pierce extends nearly as far caudad as the valve tip, making the valve look almost bifurcate, while *lemmeri* has the same structure much smaller and blunter. There is a large amount of difference in the valves, those of *lapidea* more evenly drawn out and narrower than those of the new species. A single specimen of the species has long been in the Barnes Collection and was labeled by Dr. McDunnough, "This is possibly *lapidea* Hbn. from Europe."

The most closely allied North American species appears to be *longior* Sm., from which *lemmeri* differs by being about 5 mm. greater in expanse, fore wing with the costa and inner margin more nearly parallel, possessing a more purplish cast and more contrasting maculation. Expanse 42 mm.

*Type localities and number and sexes of types:* Holotype ♂, Nov. 16; Allotype ♂, Nov. 14, in Barnes Coll. 22 Paratypes, Nov. 7-22; all of the above taken by Mr. Frederick Lemmer, at Lakehurst, N. J. 1 ♂ Paratype, Ivoryton, Conn., X-14. 8 Paratypes in Barnes Coll., balance in Lemmer Coll.

## II.

### GENERIC NOTES (PHALÆNIDÆ)

#### *Eviridemas* gen. nov.

#### Type *Viridemas minuta* B. & McD.

Proboscis aborted, minute, scarcely visible; palpi aborted, not as long as the width of the eye, roughly clothed with hair and hair-like scales; frons narrow, less than the width of the eye, not bulging but rather depressed in the vicinity of the eyes, very slightly roughened, with a very slight horizontal ridge below the middle because the ventral part is strongly bent inward, a slight corneous plate below it; eyes large, round, naked, unciliated save for a few white hairs from behind; ocelli present; antennae of male peculiar, appearing slightly pectinate, in reality with the under side of each joint drawn out into a strong lamellation, from each disto-lateral

angle of these lamellations there arises a strong serration or small pectination; a ridge of scales between bases of antennae; thorax clothed almost entirely with broad scales, a very few hairs and hair-like scales intermixed; (no trace of a prothoracic crest on four examples but a slight rubbing of some and improper pinning of others prohibits definite statement that a crest does not exist); patagia very short; metathorax with a mass of scales forming a large tuft rather than a crest; all tibiae unarmed, but fringed with very long hair and hair-like scales, the normal spurs not long but not very conspicuously shortened; tarsi not obviously modified, unarmed save for the usual spines which are rather small; abdomen practically uncrested, three or four scales at base tending to form a very slight crest; frenulum of male normal, single; retinaculum of male normal, not bar-shaped. Fore wing with the apex rounded, the termen rather obliquely curved and not crenulate, oblique enough to make the apex seem more acute than it really is; veins 3, 5 from near angle of cell; 6 from somewhat below upper angle; 9 from 10 anastomosing with 8 to form the areole which is not large; 7 from areole; 11 from cell. Hind wing with veins 3 from angle of cell; 4 from above angle; 5 obsolescent from slightly below middle of discocellulars; 6, 7 stalked from upper angle, the length of the stalk somewhat variable but (in four examples) not short; 8 anastomosing with cell near the base only.

We have given a rather lengthy description because the genus is a very peculiar one, including characters which will separate it from the Arctiidæ. It has little to do with *Viridemas* Sm., type *galena* Sm. That genus has the frons produced to a strong and rather pointed prominence with the point connected to the vertex by a strong ridge, it is also a much heavier insect agreeing with *minuta* mainly in the short tongue and a general lack of characters. The palpi are quite short, but not really aborted and so exceptionally short as in *miuta* which possesses the smallest palpi of any Phalænid we have studied. Our only specimen of *galena*, and which has been compared with the type, is too rubbed to be sure about the abdominal characters, but we suspect that fresh specimens will show a crest on the third abdominal segment, contrary to the original description. The eyes of *galena* are strongly ciliated from behind, and very likely also from in front, so that the genus *Viridemas* may ultimately go into the Cucullinæ. We do not make this transfer, pending examination of fresh material.



**Hemistilbia** gen. nov.Type *Stilbia apposita* B. & McD.

Proboscis fully developed; palpi rather short, upturned, when closely appressed the second joint nearly reaching the middle of the frons, moderately fringed with scales, the third joint short, porrect; frons smooth and scarcely bulging, with clypeal plate below it; eyes large round, naked; antennae simple, ciliated, in both sexes; thorax mainly clothed with broad scales, a few hairs intermixed; tegulae produced into a slight hood, the prothorax otherwise uncrested; metathorax with a large tuft-like crest; tibiae unarmed, the mid and hind tibiae moderately fringed with hair; abdomen without dorsal or lateral crests. Fore wing not broad, the apex rounded, the termen evenly curved and not crenulate; veins 3, 5 from near angle of cell; 6 from below upper angle; 9 from 10 anastomosing with 8 to form the areole, 7 variable, sometimes connate from areole with 8 and 9, sometimes stalked with 8 and 9; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 almost obsolete from somewhat below middle of discocellulars; 6 variable, sometimes stalked with 7, sometimes connate with 7 from upper angle, sometimes from slightly below upper angle; 8 anastomosing with cell for about one third the length.

The present genus is allied to the European genera of the *Stilbia* group, which have vein 7 of the hind wing fused with the cell for a considerable distance. The European *Stilbia anomala* Haw. (genotype of *Stilbia*) probably also varies in venation, contrary to recent European publications, as a specimen before us has veins 3 and 4 of the hind wing stalked, as well as 6 and 7.

*Hemistilbia* has shorter wings, less bulging frons, longer palpi, shorter areole, and vein 8 of the hind wing less fused with the cell, than in *Stilbia*.

**Anycteola** gen. nov.Type *Stilbia fotelloides* B. & McD.

Proboscis fully developed, unscaled; palpi upturned, short, the second joint not reaching middle of frons, its vestiture compressed and of scales only, the third joint short, not porrect; frons smooth, not bulging, narrow, scarcely more than half the width of the eye, the usual clypeal plate not visible; ocelli present; eyes large, round, naked, unciliated; antennae

simple, the shaft scarcely ciliated in both sexes, the scape with a peculiar fan-shaped tuft of spatulate hair-like scales resembling the eye-cap of certain Tineid genera (*Bucculatrix*, etc.); thorax clothed entirely with broad, and only slightly dentate, scales, save for a few fine hairs on the patagia; the prothorax without visible crest; patagia with tips upcurved forming a pseudo-crest, this being amplified by raised scales on the mesothorax forming a strong mesothoracic crest; a strong metathoracic crest in the form of a tuft; tibiae unarmed, the usual epiphysis on fore tibia, the mid tibia with the usual single pair of spurs and some hair; the hind tibia with the usual two pair of spurs and some hair, the distal spurs somewhat shorter than normal; abdomen with a slight dorsal crest at base only; frenulum simple in the male, triple in the female; retinaculum of male normal, not bar-shaped. Fore wing with the apex somewhat rounded, the termen quite obliquely curved, the normal transverse lines picked out by black raised scales; vein 3 from lower angle; 4 from well above angle; 5 from about one third below middle of discocellulars; 6 from well below upper angle; 7 variable, from the areole, or connate with the stem of 8 and 9 from the end of the areole; 9 from 10 anastomosing with 8 to form the areole which is rather small, the stem of 8 and 9 rather short; 11 free. Hind wing with veins 3, 4 from angle of cell; 5 practically obsolete from slightly below middle of discocellulars; 6, 7 rather long stalked from upper angle; 8 anastomosing with the cell for about one third the length, the base of vein 8 appearing to be individually variable but usually free.

The present genus is a very peculiar one. Aside from the nature of vein 8 of the hind wing and a general lack of many characters, *Anyceteola* seems to have little to do with *Stilbia*. We think it belongs to the Phalænidæ ("Noctuidæ"), although it may be a queer offshoot of some Bombycid stem. In some respects it is rather like *Afrida* Moesch. which possesses a rather similar structure from the antennal scape. We suspect *Afrida* may be a peculiar Phalænid, lacking ocelli, and with bar-shaped retinaculum, as vein 8 of the hind wing does not fuse with the cell except toward the base. However because of lack of ocelli plus the bar shaped retinaculum we leave *Afrida* tentatively in the Lithosiinæ. *Anyceteola* possesses ocelli which would necessitate its placement in the Arctiinæ if an Arctiid. Here it would have to fall into the group with cubitus of the hind wing trifold and the

fore wing with an areole. Few Arctiids possess such a venation, and those which have it appear to have a very long and narrow areole, also the bar-shaped retinaculum, and rather pointed wings. We cannot be absolutely certain that vein 5 of the hind wing is obsolescent. Possibly what we consider vein 5 is only a fold, and it may be that veins 3 and 4 have completely fused and that 5 is in reality from the lower angle of the cell. Such a condition takes place in some of the "Sarrothripinæ," and some species of that subfamily have a very similar habitus to *Anycteola*, as may be judged from the name. They also agree in possessing raised scales on the wings. But they disagree by possessing a bar-shaped retinaculum in the males, similar to the Arctiidae.

### Phœnicophanta Hamp.

Type *Phœnicophanta flavifera* Hamp.

1910, Hampson, Cat. Lep. Phal. B. M., X, 653, *flavifera* sole species and designated type.

This is a very peculiar genus which might well be placed with some of the aberrant Apatelinæ ("Acronyctinæ") rather than in the Acontiinæ ("Erastrinæ").<sup>2</sup> Hampson's diagnosis conveys rather a wrong impression. The proboscis is short, but nearly twice the length of the head. The frons is strongly produced, rather truncate, and appears armed with a number of minute spine-like granulations. There appears to be a slight clypeal plate closely appressed to the frontal prominence. Vein 5 of the

<sup>2</sup> Those workers who wish to reject the Hübnerian Tentamen names *Apatela* and *Erastria* (1806); to adopt the names *Acronicta* Ochs. (1816), or *Acronycta* Treit. (1825), *Erastria* Ochs. (1816) or Treit. (1826); and hence to use the family names "Acronyctinæ" (recte Acronictinæ) and Erastrinæ; find themselves confronted with a peculiar puzzle of nomenclature. See B. & Benj., Bull. B'klyn Ent. Soc., XXI, p. 183. Since this latter was written (1926), Dr. W. T. M. Forbes informed us of a published "Prospectus" by Hübner on file in the library of Cornell University which actually offers for sale the Hübnerian plate of *Erastria immista Dissimilaria* (Samml. exot. Schmett., pl. CCIII). This prospectus is dated 1814, and even with the rejection of the Tentamen would make *Erastria* Hbn. a monotypic generic name in the Geometridæ. There is also an indication that certain American species of the Zütrage, including *Triana tritona* Hbn., were published by 1814, *Triana* thus having priority over *Acronicta* and *Acronycta*.

hind wing is from close to the middle of the discocellulars and very obsolete. Veins 6 and 7 appear stalked from the upper angle of the cell and not connate, although this may be a variable character. The fore wings differ in the two sexes. There is a fold above vein 6, as illustrated by Hampson, in both sexes, and this fold appears much like vein 7. We cannot be sure if the missing vein is 9 or 7. On the female wing there are three radials on a stalk. Vein 11 is from the cell. The male has a structure in the radials of the fore wing resembling a fovea, and this appears to be bounded above and below by tubular veins. From the costal side of this, near its distal end, arises a single unbranched vein, and from the distal end the stem of a stalked bifurcate vein. Hampson's drawing shows a dip in the radial sector, which corresponds to the anal edge of the fovea-like structure, and the edge which is much thickened, but the drawing does not show the normal tubular vein along the costal edge of the structure. This fovea-like organ certainly looks much like a modified areole. If it is a modified areole perhaps the fold above vein 6 really represents vein 7, which would be the missing vein instead of 9.

The North American *Phanicrophanta bicolor* B. & McD. is so identical in structure with the Argentine *P. flavifera* Hamp., and both organisms are so very peculiar, that were it not for the widely different localities we might be inclined to consider that only race of a single species were involved.

*Afotella* B. & Benj.

Type *Hadena cylindrica* Grt.

1025, Barnes & Benjamin, Bull. B'klyn Ent. Soc., XX, 195,  
*cylindrica* sole species and designated type.

We regret to say that in our diagnosis of the genus, which is *Fotella* of Hampson but not of Grote, we overlooked the fact that the eyes are hairy as in *Trichocosmia*.

The genus falls in Hampson's keys to the Hadeninæ between *Nephelistis* and *Odontestra*, but obviously related to neither of these. It is close to *Trichocosmia* Grt., but possesses a prothoracic crest. It must be close to the true *Namangana* Staud.,<sup>3</sup> but we are now unable to make a direct comparison. As we recall, *cretacea*, the genotype of *Namangana*, the frons was somewhat bulged, but not so strongly, nor was it roughened, which is

<sup>3</sup> See 1926, B. & Benj., Pan Pac. Ent., III, 64-65.

why Hampson described the frons as smooth and flattened. Also on the only *cretacea* we ever saw, a cotype, we could find no prothoracic crest. The specimen was, however, somewhat rubbed, so we are not sure of the thoracic tuftings.

*Hadenella* Grt.

Type *Hadenella pergentilis* Grt.

1883, Grote, *Pap.*, III, 123, *pergentilis* sole species and therefore type.

1895, Grote, *Abh. Nat. Ver. Brëmen*, XIV, 81, type designated *pergentilis*.

1909, Hampson, *Cat. Lep. Phal. B. M.*, VIII, 231, type designated *pergentilis*.

Has hairy eyes and belongs in the Hadeninæ. The peculiar frons completely separates it from any other genus known to us in this subfamily. It appears rather closely related to *Afotella*, so we place it following that genus.

*Phalaeninae*.

There are a number of genera and species placed by Hampson, (1903, *Cat. Lep. Phal. B. M.*, IV) and authors in the subfamily "Agrotinæ" (recte Phalæninæ); and by Warren (1911, in Seitz, *Macrolep.*, III), considered Heliothids. These organisms possess reniform shaped eyes; mid, hind, and often fore tibiae armed with spines, but without claws.

The European *Oxytrippia orbiculosa* Esp. seems to have no real allies in North America. Neither does the Tibetan *Grumia flora* Alph. Another group, possibly representing three distinct genera, is the one termed *Ala* by Hampson and *Anartomorpha* by Warren. This group differs from our North American organisms by having the fore tibiae unspined and at the same time having decidedly hairy eyes.

The genus Hampson calls "*Agrotiphila*" is divisible into four distinct genera.

*Schöyenia* Auriv., type *arctica* Auriv., the species presumably a synonymy of *unifasciata* Ménétr., appears distinct by its compressed venation; small areole; 7, 8 and 9 stalked on the fore wing; 6 and 7 stalked on the hind wing; in conjunction with spined fore tibiae; hairy vestiture; serrate male antennae; and the usual obsolescent vein 5 of the hind wing.



*Barrovia* B. & McD. has similar tibial armature, and rather similar venation, but is at once distinct by the strong vein 5 of the hind wing which is only obsolescent toward the discal cell, by the peculiarly bipectinate-lamellate male antennae, broader wings, and general Geometriform habitus. The fore tibiae are spined, contrary to the original description. *Barrovia* seems rather out of place as a member of the Phalænidae, but we know of no better placement.

**Archanarta gen. nov.**

Type *Noctua quieta* Hbn.

"*Noctua*" *quieta* Hbn. has been placed by Hampson in his "*Agrotiphila*" (*Schöyenia*), and by Warren in *Schöyenia*. It has usually been placed in *Anarta*. The habitus is decidedly that of an *Anarta*; the wings are broad; and the eyes are distinctly hairy, although the hair is rather short, and somewhat difficult to see because of the long cilia overhanging the eyes. All tibiae are spined. The vestiture is of hair only. The venation is entirely normal in three specimens before us, the only stalking of veins being the usual one of 8 and 9 on the fore wing.

**Epipsiliamorpha gen. nov.**

Type *Agrotis alaskæ* Grt.

"*Agrotis*" *alaskæ* Grt. has been placed by Hampson in his "*Agrotiphila*" proper, on the strength of the male antennae not being serrate. We possessed a single male example from St. Paul's Island, Alaska; and recently have acquired two fine pair through the kindness of Mr. E. P. VanDuzee, the locality also St. Paul's Island. The thoracic vestiture is of hair only. All tibiae are spined. The habitus is decidedly like an *Epipsilia*, the male with normal *Epipsilia*-like wing shape, the female with the wings aborted and narrow. The venation is the same in both sexes, except that because of the aborted wings, the veins in the female wings are often rather waved. The venation of the fore wing is normal; 6 and 7 of the hind wing are stalked. The eyes are reniform shaped and obsolescently hairy, the hair sparse and rather difficult to see. Contrary to Hampson, the male antennae are very heavily serrate, almost bipectinate; and the palpi are long and exceed the frons.

**Agrotimorpha** gen. nov.Type *Agrotis staudingeri* Moesch.

The fourth group in Hampson's "*Agrotiphila*" is the one he considers typical, citing *staudingeri* as type, the citation presumably intended for *montana* Morr. which he places in the synonymy, and which is the type of *Agrotiphila* Grt. Hampson's *staudingeri* is not true *staudingeri* but is probably *colorado* Sm. In his addenda, Hampson removes *montana* from the synonymy of his *staudingeri* and puts it into *Orosagrotis* Hamp. with priority over *rigida* Sm. This is probably because of information furnished by Smith, who published on *montana* Morr., 1903, Trans. Am. Ent. Soc., XXIX, 204. Smith is correct in that Morrison described the Colorado species later named *rigida* by Smith, and his description cannot possibly apply to *staudingeri* or *colorado*. Smith is probably incorrect in associating the so-called type of *montana* in the Tepper Collection with *staudingeri*, as we have only seen the latter from Labrador. If the Tepper Collection specimen is from Colorado, Morrison's type locality, it is probably some other species.

Grote's description of *Agrotiphila* is rather poor, as it omits mention of the frons. It is not unlikely that he may have described the genus from a specimen of *colorado* erroneously determined as *montana*, but he makes *montana* sole species and therefore genotype of *Agrotiphila*. *Orosagrotis* Hamp., therefore, falls into the synonymy of *Agrotiphila* Grt., its type being *rigida* Sm.

The bulk of the species placed by Hampson in his "*Agrotiphila*" proper; i.e., *staudingeri*, *maculata*, and *colorado*, are typical "Agrotid" in habitus, have no more in common with the Heliothids than do other Agrotids; all the tibiae are spined; the vestiture is mixed, scales, hair-like scales, and hair; eyes reniform, and we can see no hair on them; the venation variable individually and not specifically, the fore wing sometimes with 7 shortly stalked with 8 and 9, the hind wing sometimes with 6 and 7 stalked. The male antennae are beaded and ciliated, but vary with the species.

These species are rather closely allied to those of the genus Hampson calls *Orosagrotis* (recte *Agrotiphila*), but lack the truncate frontal prominence.

*Agrotiphila* Grt., type *montana* Morr., (*Orosagrotis* Hamp., type  $\neq$  *rigida* Sm. nec Wlk. = *montana* Morr.) has reniform shaped eyes, not visibly hairy; vestiture mixed, hair, hair-like

scales, and scales; a truncate conical frontal prominence; all tibiae spined; the venation seems less variable than in *colorado-staudingeri*, 6 and 7 of the hind wings stalked in all specimens examined of both *montana* and *incognita*, but 7 of the fore wing is variable individually, sometimes stalked with 8 and 9 and sometimes not stalked.

*Parabarrovia* Gibson, type *Parabarrovia keelei* Gibson, is known to us only through the literature (1920, Rept. Can. Arct. Exped., III, (1), 33). Gibson states that the fore tibiae are unspined, and veins 3 and 4 of the hind wings are stalked; characters which make a rather unique genus. The habitus seems somewhat similar to *Barrovia*, and we suspect little real relationship to the normal "Agrotid" type.

We give a key to the genera discussed.

PHALAEINIDAE WITH SPINED TIBIAE AND RENIFORM SHAPED EYES.

I. All tibiae spined

A. Frons with truncate conical prominence. . . . *Agrotiphila*  
(= *Orosagrotis*)

B. Frons without truncate conical prominence

a. Thoracic vestiture of hair only;

a<sup>1</sup>. Vein 5 of hind wing strong, only obsolescent near cell; wing shape Geometriform; areole short; 7 stalked with 8 and 9 on fore wing; 6 and 7 stalked on hind wing; eyes naked  
*Barrovia*

b<sup>1</sup>. Not so; 5 of hind wing obsolescent; habitus not Geometriform; eyes naked or hairy

a<sup>2</sup>. Habitus *Anarta*-like; wing shape normal, broad, in both sexes; without stalked veins except the usual stalking of 8 and 9 on fore wing; eyes decidedly hairy; male antennae serrate . . . . . *Archanarta*

b<sup>2</sup>. Habitus *Epipsilia*-like; wing shape of male normal but not broad; of female aborted; venation normal except for stalking of 6 and 7 on hind wing; eyes obsolescently hairy; male antennae heavily serrate,  
*Epipsiliomorpha*

(? eyes naked)

c<sup>2</sup>. Wings very narrow; venation compressed; areole small; 7 stalked with 8 and 9 on fore wing; 6 and 7 stalked on hind wing; male antennae serrate . . . . . *Schöyenia*

- d<sup>2</sup>. Wings with apex rectangular; venation normal except 6 and 7 stalked on hind wing; male antennae bipectinate. . . . . *Grumia*
- b. Thoracis vestiture mixed: hair, hair-like scales and scales  
 Habitus normal Agrotid; venation variable; fore wing with 7 sometimes stalked with 8 and 9, sometimes not; 6 and 7 of hind wings sometimes stalked; variation individual only; male antennae beaded and ciliated,  
*Agrotimorpha*

II. Fore tibiae unspined

- A. Eyes decidedly hairy . . . . . { *Anartomorpha*  
*Ala*  
*Trichanarta*
- B. Eyes naked (or hair not easily visible)
  - a. Head and thorax clothed with hair only and without crests; 3 and 4 of hind wing stalked; habitus somewhat Geometriform . . . . . *Parabarrovia*
  - b. Head and thorax clothed with scales; with a small prothoracic and a large metathoracic crest; habitus of normal "Noctuid" . . . . . *Oxytrippa*

This arrangement of genera and species leaves *kyune* Barnes without placement. The species was described as a *Hadena* (1904, Can. Ent., XXXVI, 168) and later placed by Barnes and McDunnough in *Agrotiphila* [1911, Contrib., I, (4), 16; and, 1917, Check List, No. 1224]. The unique type, a female, has only part of one leg, fortunately a fore leg. The fore tibiae are spined, without claws. The palpi are moderate in length. The eyes are large and rounded, precluding association with *Agrotiphila*. The thorax is too rubbed to be sure of tuftings, but the thoracic vestiture seems rather mixed, but mostly of broad scales. The abdomen appears probably untufted. The venation is normal except that 6 and 7 of the hind wings are stalked. The frons is quite strongly bulged, altho lacking a truncate conical prominence. This bulging frons occurs in several "Agrotid" genera, the whole of the Phalæninæ needing generic revision. We tentatively place *kyune* after *capota*, which has a similar frons, in *Rhizagrotis*.

*Trichosilia* Hamp.

Type *Noctua acarnea* Sm.

1918, Hampson, Nov. Zool., XXV, 112, *acarnea* sole species and designated type.

Proboscis fully developed; palpi obliquely upturned, reaching beyond middle of frons, the second joint fringed with long hair, the third joint short; frons slightly roughened, rather bulging, and with small clypeal plate below it; eyes large, round, hairy, overhung by long cilia; antennae of male slightly serrate, and fasciculate; thorax clothed with scales, hair-like scales, and hair, with a spreading prothoracic crest tending to form a double keel to the metathorax which has loose hair from both sides tending to form a dorsal tuft; all tibiae spined and fringed with hair; abdomen not flattened, with considerable rough hair especially basally, and with lateral tufts of rough hair and scales terminally, but without distinct dorsal crests. Fore wing broad, with the apex rounded, the termen rather evenly curved; veins 3 and 5 from near angle of cell; 6 from below upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from the cell. Hind wing with veins 3, 4 from near angle of cell; 5 obsolescent from somewhat below middle of discocellulars, 6 and 7 long stalked from upper angle; 8 anastomosing with cell near base only.

Hampson's diagnosis being faulty in some respects, we have redescribed the genus.

### Trichofeltia gen. nov.

Type *Agrotis circumdata* Grt.

Proboscis fully developed; palpi obliquely upturned, reaching above middle of frons, the second joint fringed with long hair in front, somewhat shorter than usual, and the third joint proportionately longer; frons smooth, not bulging, and with only a trace of a clypeal plate below it; eyes large, round, very hairy, overhung by long cilia from behind, and shorter cilia from in front and from the bases of the antennae; antennae of male strongly bipectinate; thorax clothed with hair and hair-like scales only and without distinct crests, the metathorax with rough hair from both sides tending to form a tuft; mid and hind tibiae spined; fore tibia with only a single spine which is on the outer side near the metatarsus; all tibiae moderately fringed with hair; abdomen dorsally flattened, with some rough hair especially basally, but without distinct dorsal crests. Fore wing narrow, the apex rounded, the termen rather evenly curved, and not crenulate; veins 3 and 5 from near angle of cell; 6 from slightly below upper angle; 9 from 10 anastomosing with 8 to form the areole, 7 shortly stalked with 8 and 9 in most specimens, sometimes appearing practically connate; 11 from cell. Hind wing



with veins 3, 4 from angle of cell; 5 obsolescent from somewhat below middle of discocellulars; 6 and 7 shortly stalked from upper angle; 8 anastomosing with cell near base only.

For those interested in genitalic differences between genera, we might mention that there seems little in common between *Trichosilia* and *Trichofeltia*.

## III.

## SPECIFIC NOTES (PHALÆNIDÆ).

— *Triphæna* Ochs.

Type *Phalæna pronuba* L.

*Triphæna plebeia* race ***bajoides*** nov.

Similar to typical *plebeia*, but much smoother in general appearance, the ground color darker, the ordinary spots not strongly disconcolorous.

While *plebeia* was described from Vancouver Island, British Columbia, and California, the single Californian type is a female from unknown locality. The name should be restricted to the Vancouver Island form as the description fits this in every detail.

Forty specimens are before us, all much alike, and all very contrasty. A single example from Shasta Retreat, California, seems like the Vancouver specimens.

Specimens from Hunters, Washington, are strongly marked, but the ground color seems somewhat darker than in the Vancouver examples. A single specimen from Como Park, Colorado, agrees with the Washington examples.

Material from Vineyard and Provo, Utah, seems variable, one example nearly agreeing with the Washington lot, and varying from this to duller forms.

Both the dull and brightly marked forms are found at Yosemite, California, but Plumas Co. material before us seems all to be the dull form. The least contrasting of the specimens considerably resemble smooth *baja*.

We are restricting our types to the Plumas Co. specimens and selecting as Holotype a very unicolorous specimen.

*Type locality*: Plumas Co., Calif. *Number and sexes of types*: Holotype ♂, 8-15 Aug.; Allotype ♀, 8-15 Aug.; 3 ♂, 4 ♀, Paratypes 1-7 and 8-15 Aug.

✓ *Triphæna hospitalis* Grt.

Smith, 1898, Jour. N. Y. Ent. Soc., VI, 100, pl. VII, f. 9, figures the male genitalia in contrast to those of *jucunda*, pl. VII, f. 4. These drawings by Smith are very poor. The Barnes Collection possesses a specimen determined as *hospitalis* and this lacks a valve. Smith was the only one known to us to deliberately so mutilate specimens. The example is simply labeled "New York" and is likely the specimen from that locality mentioned by Smith. We see little to distinguish the specimen from true *jucunda* except that the claviform is somewhat longer. In reality the genitalia of both this example and typical *jucunda* seem about half way between Smith's two figures. We strongly suspect that our single "*hospitalis*" is only a freak of *jucunda*. The actual type of *hospitalis* in Collection Hill should be reexamined to determine what the name really represents. Hampson, without North American specimens and presumably upon the strength of Smith's remarks, sinks the name to the European *brunnea* D. & S.

*Triphæna esurialis* race *uclueleti* nov.

Similar to typical *esurialis*, forewings bright luteous slightly tinged with rufous, the markings tending to be washed out; no basal black filling between or before the stigmata. Hind wings as in the typical form but tinged, like fore wings, with luteous-rufous.

Type locality: Ucluelet, B. C. Number and sexes of types: Holotype, 24-VII-09; 1 Paratype, 27-VII-09, the paratype bearing an additional label, C. H. Young, Ottawa.

"*Ceramica*" *vindemialis* Gn.

This name has been omitted from recent North American lists because Hampson, (1905, Cat. Lep. Phal. B. M., V, 445, pl. XCI, f. 2) states that the type while labeled Florida will probably prove to be from New Zealand. We have an example exactly agreeing with Hampson's figure of the type, and from Florida. Tentatively we place this in *Barathra* Hbn., type *Noctua albicolon* Sepp (= *Trichoclea* Grt.)

*Perigrapha* Led.

We are inclined to place the bulk of the species put by Hampson in *Perigrapha*, along with those placed by him in *Monima*, in

*Graphiphora* Hbn. A specimen compared with the type of *prima* Sm., and agreeing fairly well although not exactly, has very strongly lashed eyes and will fall into *Stretchia*. In habitus, also, *prima* agrees with *inferior* Sm. and *plusiaeformis* Hy. Edw., this latter species the genotype of *Stretchia*.

We have a long series of the *pulchella* group of *Graphiphora* and all intergrades between *pulchella* Harv., *addenda* Sm., *palo-marensis* Hill, and *hepatica* B. & McD. We now consider that these names represent only maculation forms of an exceptionally variable species. One other name, *orbiculata* Sm., (1911, Jour. N. Y. Ent. Soc., XIX, 147) has been omitted from the Check List, presumably because Smith states for *pulchella* that he "came near" redescribing it as "*orbiculata* from a type in which the orbicular is unusually contrasty," but this certainly publishes the name and description. It can also stand as a form of *pulchella*. The name *achsha* Dyar may stand as a race of *pulchella*, and *algula* Sm. as a color form of this race, pending further material.

The so-called *Perigrapha pectinata* Sm. appears to be conspecific with *Perigonica punctilinea* Sm. Pending further material we save the latter name, tentatively, as a race, placing both names as a single species in *Perigonica*.

*Morrisonia mucens* Hbn.

We seem to possess all intergrades between *Morrisonia mucens* Hbn. and *sectilis* Gn., so that we consider the latter name represents only a maculation form.

*Embolæcia sauzalita* form *papaipemoides* nov.

Entirely similar to the typical form except for the lack of white filling to the stigmata.

*Type localities and number and sexes of types*: Holotype ♂, "California," "135," presumably originally a Henry Edwards specimen; Allotype ♀, San Francisco, Calif., Sept. 1, '00, F. X. Williams; 1 ♂ Paratype, San Francisco, Calif., ex *Cirsium*.

*Types in*: Holotype and Allotype in Barnes Collection, Paratype in Collection Bird.

*Papaipema inquaesita* form *wyatti* nov.

Similar to the typical form, but the orbicular and claviform marked with white, the reniform marked with some white especially costally.

*Type locality*: St. Therese Isl., St. Johns Co., Quebec, IX-15.  
*Number and sexes of types*: Holotype ♂, (G. Chagnon), unique.

*Notes*: Messrs. Wyatt and Beer of Chicago, Illinois, have reared a series of intermediates.

*Apatela oblimita* form *insolita* Grt.

1873, Grote, Bull. Buff. Soc. Nat. Sci., I, 82, *Acronycta*.

Much has been written regarding the identity of this "species." Mr. Tams has kindly examined the type for us in comparison with both *lanceolaria* and *oblimita*, and reports; "*Eulonche insolita* Grote is unquestionably a melanic *oblimita*." The type came from Pennsylvania. We have seen two melanic *oblimita* from Oak Station, Pa., from Mr. Fred. Marloff, who kindly deposited one in the Barnes Collection.

*Elaphria* Hbn.

Type *Elaphria grata* Hbn.

1818?, Hubner, Zütr. exot. Schmett., I, 16, No. 36, ff. 71-72, *grata* sole species and therefore type.<sup>4</sup>

This generic name has priority over *Monodes* Gn. as used in the Barnes & McDunnough Check List and in Hampson, Cat. Lep. Phal. B. M., VIII.

*Elaphria ensina* Barnes

1907, Barnes, Can. Ent., XXXIX, 12, *Oligia*.

1917, Barnes & McDunnough, Check List, No. 2610, *Monodes obliquirena* Hamp.

1918, Hampson, Nov. Zool., XXV, 151, *Calymniodes*.

Specimens agreeing with the types of *ensina* were submitted to Mr. Tams of the British Museum who labeled them *Calymniodes obliquirena*, "comp. type," "exact." We are indebted to Prof. Draudt for first suggesting the possibility of this synonymy.

*Micrathetis triplex* Wlk.

1857, Walker, Cat. Lep. Het. B. M., XI, 721, *Laphygma*.

1909, Hampson, Cat. Lep. Phal. B. M., VIII, 443, f. 123, *minuscule* B. & McD. *Micrathetis*.

<sup>4</sup> Since this page was written we have been informed by Dr. W. T. M. Forbes that this species was probably published not later than 1814.

1913, Barnes & McDunnough, Contrib., II, (1), 6, pl. II, f. 12, *Athetis*.

1913, Barnes & McDunnough, Contrib., II, (3), 115, *Athetis*.

"*Athetis minuscula* was first "described" (March 1913) by a figure. A description was subsequently published (April 1913), and the previously figured specimen indicated as the "cotype," the "type" not having the black filling to the reniform. Here is a problem in nomenclature. Is the originally published specimen the actual type, or is the type which remained in manuscript until a month later the true type? However, it is not our purpose to go further than the actual taxonomy involved, and to call attention to the specific synonymy. Regardless which "type" be selected to hold the name, *minuscula* is only a minor color or maculation form of *triplex*. In this regard, *benjamini* Draudt (in Seitz) is also the same species. We base this statement upon paratypes given the Barnes Collection by Professor Draudt, these being various forms and practically covering the range of variation of the species. With additional names applied by Professor Strand to abs. 1 and 3 of Hampson, and with the number of names at present listed in the synonymy (see Hampson, 1909), those who may wish to apply names to minor forms have a remarkable puzzle of nomenclature coupled with the necessity of careful comparison with actual types.

*Charadra deridens* Gn.

1852, Guénée, Spec., Gen., V, Noct., I, 35, pl. III, f. 8, *nigrosuffusa* Strd. *Diphthera*.

1913, Hampson, Cat. Lep. Phal. B. M., XIII, 374, *deridens* ab. 1, *Charadra*.

1916, Strand, Archiv. fur Naturgesch., A, 2, 46, *deridens* ab., *Charadra*.

*Charadra circulifera* Wlk.

1857, Walker, Cat. Lep. Het. B. M., XI, 709, *Acronycta contigua* Wlk.

1865, Walker, Cat. Lep. Het. B. M., XXXII, 446, *Charadra sudena* Smith.

1908, Smith, Jour. N. Y. Ent. Soc., XVI, 80, *Charadra*.

A considerable number of specimens of *Charadra* were submitted to Mr. Tams for comparison with the types and series in



the British Museum. The names *circulifera* and *contigua* appear to be applicable to the southern form or species subsequently named *sudena* by Smith. The name *nigrosuffusa* Strd. appears to be simply the northern species or form now going in all collections as *deridens* Gn. The type of *deridens* is not in the Barnes Collection, and according to Mr. Tams is not in the British Museum. Until other evidence is offered we would consider the name *deridens* applicable to the northern form or species with *nigrosuffusa* as a synonym; and *circulifera* applicable for the southern form or species with synonyms *contigua* and *sudena*. The exact status of *circulifera* is difficult to state. It is very possibly only a Gulf Strip race of *deridens*. Tentatively we allow two species following Smith and Barnes & McDunnough.

*Catocala euphemia* Beut.

1907, Beutenmuller, Bull. A. M. N. H., XXIII, 938, *Catocala*.

1913, Hampson, Cat. Lep. Phal. B. M., XII, 41 (ignot.),

*Catobapta*. ≠ *neogama* Auct. nec A. & S.

1884, Hulst, Bull. Bklyn Ent. Soc., VII, 51 (partim), *Catocala*.

1893, Smith, Bull. U. S. N. M., XLIV, 349 (partim), *Catocala arizona* Strd.

1913, Hampson, Cat. Lep. Phal. B. M., XII, 41 (as *neogama* ab. 3), *Catobapta*.

1914, Strand, Archiv für Naturgesch., 79, A, 8, 64, *neogama* ab., *Catobapta*.

1922, McDunnough, Can. Ent., LIV, 101, *euphemia*, *Catocala*.

In an effort to have specimens compared with the types of the Strand names in the British Museum we submitted an example of *euphemia* to Mr. Tams, who informed us that the Museum possessed no Arizona material. It is to be noted that Hampson listed Arizona for *neogama* but did not list the specimen as being in the Museum. He does, however, cite Smith, 1893, who in turn cites Hulst, 1884. Hulst, under heading *neogama* states, "The specimens from Arizona have the marginal border of the hind wing broken." Hampson's description for his ab. 3 reads, "hind wing with the terminal band interrupted." We strongly suspect that in reality Strand's description is based upon examples of *euphemia* misdetermined as variants of *neogama* by Hulst, 1884.

In relation to these Strand names, we have an example compared with the type of *subnatana* Strd. This is the normal male

of *subnata*, not normal female as suggested by Dr. McDunnough (1922, Can. Ent., LIV, 101).

## IV.

CORRECTION OF A GENERIC HOMONYM (PHALÆNIDÆ).

**Eubuchholzia** nom. nov.

Type *Arsilonche colorada* Sm.

≠ *Buchholzia* B. & Benj. - *Syn*

Type *Arsilonche colorada* Sm.

We are informed by Messrs. Embrik Strand, Theodore Frison, and R. C. Williams, Jr., that the name *Buchholzia* is preoccupied.

## V.

NOTES ON THYATIRIDÆ.

*Habrosyne gloriosa* Gn.

Guénée, 1852, Spéc. Gén., V, 12, put into print the Boisduval manuscript name *gloriosa* as being based upon a European specimen of *scripta* (*abrasa*). We have been unable to locate the type of *gloriosa*. No European worker with whom we have corresponded recognizes the name, and all agree that the locality given by Guénée is presumably in error unless by chance a single specimen might have been introduced as a pupa or larva and the resulting adult captured.<sup>5</sup>

The description is, however, good; and points out the identical differences between *scripta* (*abrasa*) and *gloriosa* that exist between *scripta* and *rectangulata* Ottol. This, coupled with the fact that Boisduval and Guénée obtained considerable quantities of material from Canada, New York, etc., lead us to consider that the heretofore unplaced name *gloriosa* is a prior name for *rectangulata*.

*Habrosyne scripta* race **abrasoides** nov.

Colors less contrasty than in typical *scripta*, the s. t. whitish shade reduced in width, the reniform more elongate. A parallel to *gloriosa* (*rectangulata*) race *arizonensis* B. & McD.

Type locality: Redington, Ariz. Number and sexes of types. Holotype ♀, unique.

The synonymy of the species of *Habrosyne* Hbn. found in America north of the Rio Grande is as follows:

<sup>5</sup> Della Torre, in Wagner, Lepid. Cat., 1921, pars 25, p. 5, lists *gloriosa* from "Kaukasien" but cites no references other than Guénée and Walker.

scripta (Gosse)	gloriosa (Gn.) (Bdv. ms.)
<i>abrasa</i> (Gn.)	<i>rectangulata</i> (Ottol.)
<i>a abrasoides</i> B. & Benj.	± <i>rectangula</i> B. & McD.
<i>chatfeldii</i> Grt.	(lapsus calami)
± <i>derasa</i> (Auct.) (nec L.)	<i>a arizonensis</i> B. & McD.

## VI.

### SPECIFIC HOMONYMS (PHALÆNIDÆ).

"*Polia*" *olivacea* (Morr.), described in *Mamestra*, is a "secondary" homonym of "*Polia*" *olivacea* Steph. Under the present International Zoological Code there seems no differentiation between "primary" and "secondary" homonyms, and *olivacea* Morr. appears to be unavailable.

"*Polia*" *olivacea obscurior* Sm. was described when Smith considered many of the western *olivacea* races, which he subsequently named, as being typical *olivacea*. Although his description seems to restrict the type to a single specimen, he makes mention of other eastern material being the same. We have carefully compared the type of *olivacea* Morr. (Strecker Collection) with the type of the so-called variety *obscurior*, and consider that the type of the latter is simply the female of the former.

If secondary homonyms are to be rejected, the name *obscurior* Sm. would appear available for the species now known as *olivacea*.

"*Polia*" *stricta kappa* B. & Benj. seems preoccupied by *Noctua cappa* Hbn., placed by Hampson in *Polia*, under the rules that specific and subspecific names have the same status as far as nomenclature is concerned, and that  $c = k$ . We propose the anagram papka nom. nov. for *kappa* B. & Benj. nec *cappa* Hbn.

## VII.

### NEW GEOMETRIDÆ (LEPID.).

*Enypia venata* form eddyi nov.

Markings similar to British Columbia *venata*, but with the primaries so heavily suffused with fuscous that with the wings folded the insect appears almost a melanic. Some of the white ground color shows through the fuscous suffusion mesad of the intradiscal and distad of the extradiscal lines. Secondaries only slightly darker than those of the typical form. The present described form is practically the opposite of form *elaborata* C. & S.

Type localities and number and sexes of types: Holotype ♂,

Friday Harbor, Wash., Aug. 2, 1924; 6 ♂ Paratypes, Friday Harbor, Wash., Victoria and Duncans, B. C., July and August.

*Notes:* the British Columbia specimens mostly from A. W. Hanham; the Washington specimens from Samuel Eddy.

***Hulstina aridata* sp. nov.**

Much like *formosata* in size and maculation, but at once easily differentiated by the practical lack of brownish shadings. Genitalia of male not unlike *formosata* in general but differing in many details, especially in the sacculus. Expanse 32 mm.

*Type locality:* Mohave Co., Ariz. *Number and sexes of types:* Holotype ♂, April; 19 ♂ Paratypes May 1-7; presumably collected by O. C. Poling.

*Note:* the Barnes Collection possesses other specimens from Clark Co., Nev.